

Appl. No. 10/766,491  
Reply to Office action of 09/15/2005

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1 – 20 (Canceled).

21 (new) An electroplating process, comprising:

placing a substrate in an enclosure;

forming a seed layer over said substrate within said enclosure, said enclosure being substantially devoid of unwanted contaminants;

forming a thin layer of oxide over said seed layer within said enclosure, said enclosure still being substantially devoid of said unwanted contaminants during said forming said thin layer of oxide;

removing said substrate from said enclosure after forming said thin layer of oxide over said seed layer; and

placing said substrate and said thin layer of oxide in an electroplating solution.

22. (new) The process as recited in Claim 21 wherein said electroplating solution is a copper electroplating solution.

23. (new) The process as recited in Claim 21 further including forming a barrier layer over said substrate within said enclosure prior to forming said seed layer, said enclosure still being substantially devoid of said unwanted contaminants.

24. (new) The process as recited in Claim 23 wherein said enclosure includes at least 3 compartments, and wherein said barrier layer is formed in a first

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compartment, said seed layer is formed in a second compartment, and said thin layer of oxide is formed in a third compartment.

25. (new) The process as recited in Claim 23 wherein said enclosure includes at least 2 compartments, and wherein said seed layer and said barrier layer are formed in a first compartment and said thin layer of oxide is formed in a second compartment.

26. (new) The process as recited in Claim 21 wherein said seed layer is a copper seed layer.

27. (new) The process as recited in Claim 21 wherein forming said seed layer over said substrate includes forming said seed layer over said substrate at a first low pressure ranging from about 1.5 millitorr to about 50 millitorr.

28. (new) The process as recited in Claim 21 wherein forming said thin layer of oxide over said seed layer within said enclosure includes introducing pure oxygen into said enclosure thereby forming said thin layer of oxide.

29. (new) The process as recited in Claim 21 wherein forming said thin layer of oxide over said seed layer within said enclosure includes forming said thin layer of oxide having a thickness ranging from about 0.5 nm to about 10 nm.

30. (new) The process as recited in Claim 21 wherein forming said thin layer of oxide over said seed layer within said enclosure includes forming a thin layer of oxide at a temperature ranging from about -10°C to about 150°C.

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31. (new) The process as recited in Claim 21 wherein placing said substrate in said enclosure includes placing said substrate in said enclosure containing said unwanted contaminants and removing said unwanted contaminants from said enclosure.

32. (new) The process as recited in Claim 31 wherein said unwanted contaminants are selected from the group consisting of:

moisture;

volatile organics; and

ionic radicals.